

## THE ANNALS

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XXII.—*Brief Descriptions of new Thysanoptera.*—IX.\*

By RICHARD S. BAGNALL, F.L.S.

Suborder TEREBRANTIA.

Family Ceratothripidæ.

Genus CERATOTHRIPOIDES, nov.

Like *Ceratothrips*, but with a 2-jointed antennal style, the basal segment being stout.

Head transverse; maxillary palpi 3-jointed. Antennæ 7-jointed, about twice as long as the head, with the third segment very small and without trichome; style 2-jointed, with the basal segment stouter than the apical; forked trichome on segment 4.

Prothorax transverse, longer than the head, with two pairs of stout setæ at each posterior angle. Fore-wing with only a few setæ on distal half of upper vein.

Type. *Ceratothripoides brunneus*, mihi.

*Ceratothripoides brunneus*, sp. n.

Length about 1.1 mm.

Colour brown, including upper wings; antennæ with joint 3 and extreme bases of 4 and 5 light; fore-tibia and

\* Continued from Ann. & Mag. Nat. Hist. ser. 8, vol. xvii. p. 412.

all tarsi yellowish. Excepting for antennæ, curiously like *Physothrips marshalli*, Bagn.

Head transverse, about 1·5 times as broad as long; eyes coarsely faceted, sparingly pilose; ocelli large, set well back; anterior one on or above a line drawn across centre of eyes; interocellar setæ present, strong; dorsal surface of head weakly striate at base and between eyes above the ocelli. Mouth-cone rather sharp, almost reaching across prosternum; maxillary palpi long, 3-jointed, the joints being approximately subequal in length. Antennæ about twice as long as the head; segment 3 small, pedicellate; 4 egg-shaped, about as broad as 2; 5 cylindrical; 6 broadly united to 5, sides of basal half subparallel, thence converging

Fig. 1.



*Ceratothripoides brunneus*, sp. n., ♀. Right antennæ, × c. 200 diam.

to base of 7. Bifurcate sense-trichome on 4 and a single or simple trichome on 5 at outer side. Relative lengths of antennal segments as follows:—11 : 15 : 11 (with pedicel) : 18 : 22 : 9 : 6.

Prothorax slightly longer than the head, about 1·5 times as broad as long; hind angles broadly rounded, each furnished with two strong setæ, the inner longer than the outer and about 0·6 the length of the pronotum. Surface weakly striate transversely; sparsely spinose; spine on each side of median line of posterior margin about 0·3 the length of the inner postero-angular seta.

Pterothorax slightly longer than broad. Legs normal. Fore-wings about 15 times as long as broad near middle;

costa with 22-23 setæ; upper vein with 3+4 basally, a long space, and then 1+1 at extreme apex; lower vein with 17 setæ; all setæ smallish, cilia somewhat sparse.

Abdomen elongate-ovate, narrowing from segment 7 to apex; posterior margin of tergite 8 with a moderately long comb of minute setæ. Outer pair of postero-marginal setæ of segment 9 longer than the inner pair and 1.7 times the length of the tergite; inner pair on 10 higher up and longer than outer, just upon twice the length of the segment; a widely spaced pair of dorsal bristles, moderately long, on tergite 9.

*Type.* British Museum of Natural History (Imperial Bureau of Entomology).

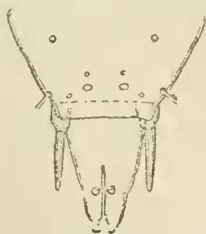
*Hab.* GOLD COAST, Aburi; 1 ♀ with *Eurhynchothrips convergens*, Nov. 5, 1915, on Cola-shoots and flowers (*W. H. Patterson*). Reg. 269, I.B.E. 103.

### Family Thripidæ.

#### *Odontothrips bispinosus*, sp. n.

♀.—This form, unfortunately represented by a solitary example, closely approaches *O. australis*, and a separate description is undesirable. It is lighter in colour, but the

Fig. 2.



*Odontothrips bispinosus*, sp. n., ♀. Dorsal view of end of abdomen, showing spines on segment 9; bristles and setæ omitted.  $\times$  c. 200 diam.

unique example is probably somewhat teneral. The pronotum is practically flat, with longer and more slender bristles at posterior angles. The pterothorax and abdomen are broader, and the latter, ignoring segments 8-10, is distinctly ovate. The comb of posterior margin of tergite 8 is practically lost, only 2 or 3 very minute micro-setæ showing at extreme ends, whilst the posterior angles of segment 9 are

each ornamented by a strong straight spine, which, with the basal part, is about 0·7 the length of the segment bearing them. The apical abdominal bristles are shorter and more slender, especially the dorso-median pair on segment 10, which are more slender than the others, and shorter than the corresponding pair on tergite 9, whereas in *australis* this particular pair of bristles are the longest of all the apical bristles.

The comparative lengths of the abdominal bristles of the two species are approximately as follows :—

		<i>bispinosus</i> .	<i>australis</i> .
Postero-marginal dorso-median pair,	9 . . . .	100	102
" " "	10 . . . .	93	125
Pair at posterior angles	9 . . . .	90	100
" " "	10 . . . .	90	100

The stout spines of the abdominal segment 9 are a distinctive feature—in fact, they may be regarded as unique in known Terebrantian Thysanoptera.

*Type*. In Coll. Bagnall, University Museum, Oxford.

*Hab*. W. AUSTRALIA, Perth ; 1 ♀ with *O. australis*, sp. n. (*E. B. Poulton*).

*Odontothrips australis*, sp. n.

♀.—Length about 1·3 mm.

Colour dark chestnut-brown, fore-tibiæ lighter and all tarsi yellowish-brown ; fore-wings brown, with basal fifth or thereabouts clear, though slightly tinged with light greyish-brown towards anterior margin. Antennal segment 3 light yellowish-brown, and a ring near base of 4 and 5 greyish to practically colourless.

Head approximately 1·22 times as broad as long. Cheeks slightly swollen behind eyes and thence practically parallel, posteriorly transversely striate ; eyes large and coarsely faceted, occupying approximately 0·7 the total length of head ; ocelli placed well back, posterior pair upon a line drawn just above the posterior margins of eyes ; interocellar bristles short, placed immediately above the posterior ocelli. Antennæ twice as long as the head, sense-cone on inner surface of segment 6 (peculiar to the genus) normal. Relative lengths of segments 3 to 8 approximately as follows :—54 : 54 : 36 : 52 : 7 : 11. Pronotum apparently suborbicular, a little longer than the head and about 1·45 times as broad

as long; bristles at posterior angles about one-half as long as the pronotum. Anterior femora very broad viewed laterally, with the posterior margin strongly arched; fore-tibial teeth prominent, much as in *Odonthrips ulicis*. Fore-wings moderately slender, pointed at tip, 17 to 18 times as long as wide at middle; setæ on costa, upper and lower vein, 26-30, 23-26, and 20-23 respectively, short and slender, but those on costa and lower vein increasing in size towards the tip of wing, where they are more than usually long, being appreciably longer than the breadth of the wing.

Abdomen much as in *O. ulicis*, but apical bristles comparatively shorter and the comb (obsolete medianly in both species) short and sparse.

♂.—The male is much smaller than the female and has tergite 9 postero-medianly produced into two long "arms," as long as or overlapping segment 10.

*Type*. In Coll. Bagnall, University Museum, Oxford.

*Hab*. W. AUSTRALIA, Perth, Mundaring Weir, Darling Range; several examples of both sexes on flowers of a few prickly herbs with Papilionaceous red flowers, close together, August 3rd, 1914 (*E. B. Poulton*). Reg. no. 38.

The species may be distinguished from *O. ulicis*, Hal., by its smaller size, the very small interocellar bristles, shorter pronotal and abdominal bristles, etc. The structure of tergite 9 in the ♂ is distinctive.

*Aptinothrips ruficornis*, var. *connaticornis*, Uzel.

A common species in Europe and North America.

*Hab*. INDIA, Lebong, Darjeeling, Feb. 1909: 1 ♀ in tea-flowers with *Physothrips lefroyi*, Bagn. (*Maxwell Lefroy*).

*Pseudothrips achaetus*, Bagn.

♂.—I have now secured a good example of this sex, and find that the sternites 3 to 7 have a somewhat strongly transverse area on each, that on 3 being the smallest and 7 the largest. The specialized setæ on tergite 8 consist of but one pair somewhat close together, of normal form, slender, and about twice as long as the space between them.

*Additional Records.* W. AUSTRALIA, 1 ♂, Coltsloe Beach, near Fremantle, Aug. 31, 1914, and New South Wales, several ♀ ♀, Blue Mountains (Jenslan Caves to Mt. Victoria), in flowers of *Helichrysum* sp. (E. B. Poulton). Reg. 40 and 37 respectively.

*Physothrips brunneicornis*, Bagn.

Originally described from Japan.

*Hab.* INDIA, 1 ♀, teneral, Ringtong, T.E., Darjiling Dist., on rose, 14. vi. 1916 (E. A. Andrews). Reg. 287, I.B.E. 121.

*Physothrips brevicornis*, Bagn.

♂.—Much smaller than the ♀, with a large, broad, elliptical area on each of the sternites 3 to 7. Two pairs of specialized setæ on tergite 9 of normal form, the inner pair situated more posteriorly, long, being about twice the length of the outer pair.

*Additional Records.* AUSTRALIA, Melbourne, 1 ♀ and 1 ♂ in dandelion-flower, 1914 (F. Spry), Reg. 121; and Healesville, Victoria, both sexes in numbers on *Helianthus* sp., February 1914 (R. Kelly), Reg. 89.

*Physothrips peculiaris*, sp. n.

♂.—Length approximately 1.2 mm.

Colour light lemon-yellow, thorax and first two antennal segments of a little deeper shade, and head and last two abdominal segments of a brownish golden-yellow. Forewings clear excepting for a faint and ill-defined bar occupying the median third or thereabouts, and a short similar bar at extreme tip. Cilia and setæ faintly fuscous. Note: the specimens before me had been preserved in spirits for ten or so years before being mounted.

Head slightly broader across eyes (where it is broadest) than long, and not as long as the prothorax. Eyes prominent, coarsely faceted, occupying about 0.6 the length of head; ocelli large, interocellar setæ somewhat close together. Cheeks somewhat swollen immediately behind eyes, then slightly emarginate, widening again near base. Antennæ about three times as long as the head; basal joints approximate, distinctly stouter than any of the succeeding, which are more than usually slender, 3 and 4 constricted both

distally and basally, the former with pedicel. Relative lengths of segments approximately as follows:—29 : 40 : 78 : 76 : 47 : 64 : 15 : 19. Pronotum with sides rounded, not strongly transverse (about 1·3 times as broad as long); bristles at anterior angles somewhat prominent, about 0·2 the length of the pronotum; those at posterior angles only moderately long and strong, the inner pair longer than the outer and about 0·4 the length of the pronotum. Fore-legs more than usually long, rather stout. Wings long, moderately slender; the fore pair with setæ as follows: costa 23–26; upper vein 4 (3) + 7–10, running into the distal half, with 2 (3) in distal fifth; lower vein with 14–16. Abdomen long and slender. Tergite 9 with a series of two pairs of minute setæ, the outer pair being on a higher plane and a little longer than the inner; the bristle at posterior angles rather long, somewhat variable, strong, with a shorter stronger spine at each angle immediately within.

*Type.* In Coll. Bagnall, University Museum, Oxford.

*Hab.* INDIA, Pusa, Bengal, numerous ♂♂ on lucerne, Feb. 1906 (*H. Maxwell Lejroy*).

This striking species, on discovery of the ♀, may have to be removed from the genus *Physothrips*.

#### Suborder TUBULIFERA.

##### Family Phlæothripidæ.

##### *Haplothrips* group.

##### a. *Wings clouded*.

##### *Haplothrips fuliginosus* (Schille).

*Cryptothrips* (sic) *fuliginosa*, Schille, 1910, Acad. Litt. Cracov. xlv. p. 7.

*Haplothrips obscuripennis*, Bagnall, 1913, Ent. Month. Mag. ser. 2, xxiv. p. 264.

I have fortunately had the opportunity of examining co-types of Schille's *Cryptothrips fuliginosus*, and find that it cannot be referred to the genus *Cryptothrips* or any allied genus—that, in fact, it is a typical *Haplothrips*, and identical with the species I described under the name of *obscuripennis*.

Hood's *H. nubilipennis* comes very near to this species; it was described from a single example, and the colour of the

intermediate antennal segments is not well-defined as in *fuliginosus*.

*Distribution.* EUROPE (Galicia and England).

*Haplothrips victoriensis*, sp. n.

♀.—Length 1·7 to 1·9 mm.

Colour deep black-brown, fore-tibiae brownish-yellow shading to yellow distally; hind and intermediate tarsi brown, fore-tarsi yellow; basal antennal segments yellow, very lightly touched with grey-brown; 4 yellowish-grey brown with basal third yellow; 5 a slightly deeper brown with basal fourth yellowish; 6 to 8 brown (lighter than basal joints) with extreme base of 6 in some examples feebly lighter. Wings fumate as in *fuliginosus*.

Head much as in *fuliginosus*, but shorter and broader, approximately as long as or only slightly longer than broad, cheeks very faintly rounded, slightly convergent posteriorly, minutely and sparsely setose; eyes occupying about 0·35 the length of head; postocular bristles long, stout, dilated apically. Antenna about twice as long as the head; segment 3 narrow, 4 large, broadest of all; relative lengths of segments 3 to 8 approximately as follows:—50 : 55 : 47 : 44 : 40 : 22. Pronotum about 0·8 the length of head and twice as broad as long; setæ stout, dilated apically, of the two at each posterior angle the outer is the longer, being about 0·55 as long as the pronotum; other pronotal setæ shorter. Forewings with 11 (10–12) duplicated cilia. Fore-femora incrassate, fore-tarsus unarmed. Pterothorax broad, approximately as long as broad. Abdomen a little broader than the pterothorax, gradually narrowing to segment 7 and thence more sharply to base of tube. Tube 0·8 as long as the head, more than half as wide at tip as at base and twice as long as wide at base. Bristles on segment 9 long, not as long as tube, slender, colourless; apical bristles as long as tube, stouter than those on 9, fuscous, but losing colour distally.

♂.—Smaller, more slender; head a little longer; fore-legs stouter and fore-tarsus armed with a short broadly seated tooth.

*Type.* In Coll. Bagnall, University Museum, Oxford.

*Hab.* AUSTRALIA, in the neighbourhood of Healesville,



Victoria, on *Acacia decurrens* v. *mollissima*; *Acacia fimbriata*; *Acacia melanoxylon*; *Prostanthera lasiantha*; *Darvisia ulicina*; *Escallonia montevidensis* with larvæ; *Eryngium pandanifolium*; *Polygonum* sp.; roses; wall-flowers and amongst dead seeds of *Bursaria spinosa* (*A. E. Shaw & R. Kelly*). Warburton, Victoria, on *Senecio velleioides*, *Leptospermes scoparium*, and *Laurestinus* sp. (*R. Kelly*).

Distinguished from *H. fuliginosus* (Schille) by its larger size, deeper coloration, shorter head, etc. The postocular and pronotal setæ and those on the wing-scale are pointed in *fuliginosus* and are more slender than in *victoriensis*.

b. *Form heavy, wings clear, broad basally and distally, without duplicated cilia.* Hab. AUSTRALIA.

*Haplothrips robustus*, sp. n.

♀.—Length 1·6 mm.; breadth of mesothorax 0·38 mm.

Colour brown, head, thorax, and end of abdomen darker; fore-tibiæ shaded yellowish distally and fore-tarsi yellowish. Antennal segments 1, 2, and 5 to 8 uniform dark grey-brown, 4 lighter brown, and 3 yellowish. Wings clear excepting for a light brownish patch at base. Hypodermal pigmentation heavy.

Head scarcely perceptibly longer than broad at base (where it is broadest), cheeks straight, widening posteriorly, though this may be exaggerated by pressure in mounting; vertex produced in the form of a hump, more pronounced than usual, upon the apex of which the overhanging anterior ocellus is seated. Postocular bristles short, blunt. Antennæ about 1·8 times as long as the head, segment 4 broader than either 3 or 5; relative lengths of segments 3 to 8 approximately as follows:—50 : 55 : 48 : 45 : 44 : 33. In one example segment 6 is longer (49 instead of 45) and at least half the suture between 7 and 8 is fused.

Prothorax 0·65 the length of the head and about twice as broad as long; setæ moderately long, blunt, colourless; the one at each posterior angle the longest, about 0·45 the length of the pronotum. Fore-tarsus armed with a minute tooth; fore-femora slightly incrassate. Wings broad, the fore pair being curiously broadened just beyond basal scale and again, but neither so strongly, nor suddenly, beyond median constriction. Abdomen very slightly broader than pterothorax.

Tube 0·65 the length of head, less than twice as long as wide at base, and approximately twice as broad at base as at apex. Abdominal bristles somewhat long and slender, colourless; those at apex of tube also slender, about as long as tube, fuscous basally.

*Type.* In Coll. Bagnall, University Museum, Oxford.

*Hab.* S. AUSTRALIA, Adelaide, Mount Lofty Range, 1 ♀ from flowers of *Acacia myrtifolia* or *Epachris impressa*, Aug. 9, 1914; Outer Harbour, from flowers of *Mesonbryanthemum*, Aug. 28th, 1914 (*E. B. Poulton*). Reg. 41 and 43.

*Haplothrips melanoceratus*, sp. n.

This species agrees in almost every respect with *H. robustus*, sp. n., but may be sharply distinguished by the fact that the antennal segments 1-8 are all entirely of a uniform dark grey-brown. The tube is not so stout and the pronotum is more than twice as broad as long. The unique example appears to be slightly teneral, and, excepting for the antennæ, is noticeably lighter in colour.

*Type.* In Coll. Bagnall, University Museum, Oxford.

*Hab.* S. AUSTRALIA, Adelaide, Outer Harbour, in flowers of *Mesonbryanthemum* with *H. robustus*, 28. 8. 14 (*E. B. Poulton*). Reg. 43.

c. *Wings clear, very slender distally, parallel-sided, with median constriction almost lost.*

*Haplothrips tenuipennis*, sp. n.

♀.—Length 1·5 mm., breadth of mesothorax 0·32 mm.

Colour chestnut-brown, end of abdomen inclined to be lighter, and tube lighter distally than basally. Fore-tibiæ and the extreme apices of intermediate and hind tibiæ lemon-yellow, the fore-tibiæ tinted with light grey-brown basally and towards margins; all tarsi light lemon-yellow. Antennal segment 1 concolorous with head, 2 yellowish distally; 3 to 6 yellow, 5 and 6 in some specimens shaded lightly with grey distally; 7 and 8 uniform light brown. Wings clear, faintly fuscous at bases.

Head as broad as long and 1·3 times as long as pronotum; postocular bristles moderately long, about 0·22 the length of

head. Antennæ at least 1·8 times as long as the head ; relative lengths of segments 3 to 8 approximately as follows :— 46 : 50 : 42 : 39 : 37 : 22. Prothorax transverse, about 2·3 times as broad as long ; all setæ present, blunt, those on posterior margins about 0·4 the length of pronotum. Fore-femora incrassate ; fore-tarsus unarmed. Fore-wings very narrow from about basal third and median constriction scarcely apparent ; lower margin with 8 (7-9) duplicated cilia.

Abdomen as broad or scarcely as broad as the pterothorax, gradually tapering to tube ; tube about 0·63 as long as head, 0·5 as broad at base as long, and 0·55 as broad at tip as at base ; sides evenly converging and no constriction at apex. Bristles at apex of tube distinctly longer than tube.

♂.—Smaller, body more slender. Fore-femora not strongly incrassate and tarsal tooth minute.

*Type*. British Museum of Natural History (Imperial Bureau of Entomology).

*Hab*. INDIA, Ringtong, T.E., Darjiling Dist., taken in numbers on tea-bushes (Reg. 286, I.B.E. 120) and on rose (Reg. 287, I.B.E. 121), 14. vi. 1916, by Mr. E. A. Andrews (of the India Tea Association).

### *Hindsiania melaleuca*, Bagnall.

*Hindsiania melaleuca*, Bagnall, 1911, Ent. Month. Mag. ser. 2, xxi. p. 61.

*Zygothrips bicolor*, Hood & Williams, 1915, Journ. New York Ent. Soc. xxiii. p. 126.

I found my original example of *H. melaleuca* in the Botanic Gardens, Copenhagen, and am interested to find that the *Zygothrips bicolor* of Hood & Williams, taken by Williams in Florida, is referable to the same species.

### *Podothrips duplicatus*, sp. n.

♀.—Length about 1·2 mm.

Like *Haplothrips aculeatus* in general appearance.

Colour brown, tube darker basally ; fore-tibia pale yellow, shaded along inner and outer margins with grey-brown ; hind and intermediate tibiæ also pale yellow, lightly shaded with grey-brown medianly ; all tarsi yellowish, with brown fleck distally. Antennal joints 1 and 2 concolorous with head ;

3 yellowish; 4-8 brown, but of a lighter shade than head. Wings light smoky grey.

Head 1.5 times as long as the prothorax and only about as long as broad; cheeks apparently gently arched, with the appearance of converging posteriorly (this point is not clear in the unique preparation, due to pressure in mounting). Eyes in their greatest dorsal length occupying about one-third (0.33) the length of the head. Ocelli of moderate size, posterior pair above a line drawn across centre of eyes, anterior ocellus forwardly directed. Postocular bristles broken off in type. Antennæ approximate at base, about 1.8 times the length of the head; relative lengths of segments as follows:—10 : 14 : 15 : 15 : 14 : 14 : 14 : 11. Joints 2 to 7 practically subequal in length, gently diminishing in breadth; 3 broadly and roundly clavate; 8 pointed, slightly constricted at base. Mouth-cone short, reaching about halfway across prosternum, broadly rounded.

Prothorax twice as broad as long, the greatest breadth being scarcely narrower than width across fore-coxæ. All setæ present and well-developed; strongly dilated distally, those at posterior angles about 0.45 and those at anterior angles 0.36 the length of prothorax. A similar seta on each fore-coxa; fore-femur incrassate; fore-tibia stout, apically produced within into a sharp tooth; fore-tarsus armed with a short stout tooth. Pterothorax rather broader than long and than width across fore-coxæ. Metathorax laterally converging posteriorly. Wings slender, reaching to abdominal segment 6, constricted in middle, sparsely fringed, the fore-wing having four duplicated cilia.

Abdomen elongate, only as broad as the pterothorax, elongate, gradually narrowing from base of segment 7 to tube. Tube about 0.7 as long as the head, 0.47 as broad at base as long and nearly 0.6 (0.57) as broad at apex as at base; terminal hairs short and weak, about 0.4 the length of the tube. Paired wing-retaining setæ up to and including segment 7, the pair near posterior margin being stronger than the median dorsal pair. Abdominal setæ slender, dilated at apex, colourless, pointed pairs on 9 being as long as the tube.

Abundantly distinct from *P. semiflavus*, Hood, both as regards colour and structure, and necessitating some slight amendment of the original diagnosis of the genus.

*Type.* British Museum of Natural History (Imperial Bureau of Entomology).

*Hab.* GOLD COAST, Aburi, 1 ♀ on *Canna*-flowers with *Physothrips marshalli*, 30. xi. 15 (*W. H. Patterson*), Reg. 260, I.B.E. 94.

*Polothrips propinquus*, sp. n.

♀.—Length about 1.5 mm.

This form comes very near to *P. duplicatus*, sp. n. It is larger and somewhat more robust. The distal fourth or thereabouts of the fore-femora is light yellow; the antennal joints 3 and 4 are yellow, the latter lightly touched with brown.

The prothorax is comparatively shorter and more strongly transverse, and the posterior setæ at least (also strongly dilated distally) are distinctly longer than in *duplicatus* (6:4), those at posterior angles being 0.55 and those at anterior angles about 0.35 the median length of the pronotum. The fore-tibia is produced into the form of a tooth at the apex within, but there does not appear to be a fore-tarsal tooth (one fore-foot is broken off and the other tucked under the head in the unique example). The relative lengths of the antennal joints 3 to 8 are as follows:—18 : 20 : 16 : 15 : 16 : 14.

There are 6-7 duplicated cilia in the fore-wings.

The tube is stouter basally, being about 0.55 as broad at base as long and a little less than half (0.47) as broad at apex as at base, 0.62 as long as the head. Terminal hairs short and weak.

*Type.* British Museum of Natural History (Imperial Bureau of Entomology).

*Hab.* GOLD COAST, Aburi, 5. xi. 12, 1 ♀ from "Cola shoots and buds" (*W. H. Patterson*). Reg. 269, I.B.E. 103.

*Trichothrips* group.

Genus EURHYNCHOTHRIPS, nov.

♂.—Head not as long as broad, with sides converging posteriorly, slightly longer than prothorax. Mouth-cone long, sides straightly narrowed to apex, reaching across prosternum, and as long as the dorsal length of head. Antennæ 8-jointed, all joints well separated. Ocelli well forward, the anterior ocellus directed forwards.

Prothorax strongly transverse, more than twice as broad

as long and 1·5 as broad as head; with a well-developed accessory seta at each hind angle. Fore-tarsi (in male) unarmed. Wings broad, with sides subparallel. Tube basally, in male, only shallowly and broadly emarginate. Abdomen only moderately heavy.

This genus is separated from *Rhynchothrips* by the last and penultimate antennal joints not being short and closely united, the convergent cheeks, the stouter mouth-cone, and the shorter and transverse prothorax and more slender build.

It should be here noted that the two Trichothripid species, *Ædemothrips brevicollis*, Bagn., from Japan, and *Ædemothrips propinquus*, Bagn.\* (Australia), both described from female examples, may be referable, on the discovery of the respective males, to other genera.

Type. *Eurhynchothrips convergens*, mihi.

*Eurhynchothrips convergens*, sp. n.

♂.—Length about 1·8 mm., breadth of mesothorax 0·37 mm.

Colour chestnut-brown; tube lighter in distal half; fore-tibiæ yellow, lightly shaded with brown on the outer margin and near the base within; all tarsi yellowish. Antennæ with segment 1 brown, 2 brown shading to yellow, 3 to 6 yellow, 3 pale, 4 and 5 tinged lightly with brown distally, 6 with distal half or thereabouts brownish, and 7 and 8 wholly light brown. Wings clear, scale of fore-wing brown, cilia dusky.

Head a little more than 0·8 as long as broad immediately behind eyes; cheeks faintly rounded, converging posteriorly, about 0·85 as broad at neck as behind eyes. Eyes broadly rounded, occupying in their greatest dorsal length approximately 0·4 the length of the head; space between them about 0·4 the greatest width of the head. Vertex not produced, ocelli large, posterior pair above a line drawn through centre of eyes and contiguous to their inner margins, anterior ocellus forwardly directed. Antennæ twice or a little more than twice as long as the head, set below the vertex with the basal joints subapproximate; joint 4 broader than 3 or any of the others. Relative lengths of joints 3 to 8:—20 : 22 : 20 : 23 : 22 : 16; 3 claviform, 4 and 5 broad and roundly claviform, 6 to 8 narrower, elongated. One stout sense-cone on outer side of segment 3, 1 + 2 similarly stout cones on 4,

\* This must not be confused with *Trichothrips propinquus*, Bagn., an English species.

1 + 1 on 5 which are not so stout, and 1 + 1 slender cones on 6 ; 1 long slender one on 7.

Sense-bristles at end of maxillary and labial palpi long. Postocular setæ about as long as the eye, apex dilated.

Prothorax about 0·8 as long as the head and a little more than 1·5 times as broad, from 2·1 to 2·4 times as broad as long. All setæ present, colourless, and also a well-developed accessory pair at posterior angles, dilated apically ; those at posterior angles the longest, about 0·6 the length of the pronotum, those at the anterior angles being about 0·35 the length. Fore-coxæ scarcely projecting, each furnished with 1 prominent seta. Femora somewhat stout, fore-femora short, incrassate ; fore-tarsi simple, unarmed. Pterothorax only slightly broader than long. Wings only reaching to about abdominal segment 6 ; broad, fore-wings about 10 times as long as broad ; duplicated cilia 11 to 14, in two cases 17 and 18.

Abdomen only a little broader than the pterothorax, gradually narrowing to tube from segment 6. Tube about 0·9 as long as the head, twice as long as broad at base, and little more than 0·4 as broad at apex as at base. Terminal hairs brownish, about 0·6 as long as the tube. Abdominal setæ well developed, yellow or colourless, dilated at apex, those on 9, but slightly dilated at apex, are a little more than 0·8 the length of the tube.

*Type.* In British Museum of Natural History (Imperial Bureau of Entomology).

*Hab.* GOLD COAST, Aburi, Nov. 5, 1915, ♂s only on *Cola*-shoots and buds (*W. H. Patterson*). Reg. 269.

The larva (advanced stage) of this species is yellowish-white (in spirit), with rows of brown spots across meso- and metanotum and a single row across each abdominal segment 1-7. Pronotum with two brown "plate" patches almost adjoining ; region of first two pairs of stigmata brown, and abdominal segment 8 with lateral brown patches. Abdominal segments 9 and 10 tube-like. Head small, with a pair of brown eye-spots, and basal antennal joints brownish.

*Trichothrips longicornis*, Bagn.

1913. Ann. & Mag. Nat. Hist. ser. 8, xii. p. 293.

This species was originally described from numerous dried specimens in the British Museum, labelled "Sierra Leone."

There are several examples in Mr. Patterson's collection, and a comparison with the original specimens makes it necessary to amend and amplify the description. It is larger than originally stated, being about 1.8 mm. long, and as regards colour the apical and penultimate antennal joints are chestnut-brown, of a lighter shade than the body. The prothorax has the postero-marginal setæ moderately long, those at posterior angles being about 0.4 the length of the prothorax; the mid-lateral pair is shorter, whilst the antero-marginal pairs are quite short, thus differing markedly from the prothoracic setæ in *T. femoralis*, Moulton. There are two rather stoutish genal spines at about the basal fourth of head.

♀.—Forma *macroptera*.—The wings are rather stout, reaching to the abdominal segment 7; clear with smoky-grey cilia and without (apparently) any duplicated cilia, thus again demonstrating the species' close relationship to *T. femoralis*.

*Hab.* GOLD COAST, Aburi, one macropterous and several apterous females and a few young larvæ, from a "conical gall (not made by thrips) on leaves of undetermined plant," November 17, 1915. Reg. no. 263.

#### *Cryptothrips* group.

##### *Cryptothrips shavianus*, sp. n.

♂.—Length about 3.0 mm., belonging to the *major*, Bagn.-*carbonarius*, Hood, group.

Colour dark blackish brown, abdomen up to the fifth or sixth segment lighter, but apically very deeply pigmented black. Fore-tarsus and apex of fore-tibia yellowish-brown. Antennal segment 2 apically yellowish, 3 yellow lightly touched with brown distally, 4 grey-brown with basal third or thereabouts yellowish, basal fourth of 5 similarly yellowish and extreme base of 6 yellowish, which is scarcely noticeable in one example. Wings of a light smoky greyish-yellow, lighter (to almost clear) distally; fore-wings with scale and a small basal patch brown, and with two roughly defined lines (the part between being light) running for two-thirds the length of wing; lower wing with a similar double line, which is, however, situated closer to the upper margin of wing.

Head large, approximately rectangular, converging very slightly posteriorly, 1.3 times as long as broad. Eyes small,



occupying 0·22 the total length of head, finely faceted; ocelli rather small, posterior pair widely separated, contiguous to inner margins of eyes near their lower fourth. Postocular bristles blunt, about as long as the length of an eye; the pair just behind posterior ocelli minute (as large as the postocular bristles in *C. carbonarius*). Antennæ about 1·35 times as long as the head, segments 3 to 6 roughly clavate; 3 but slightly longer than 4 and 5 slightly shorter than 4.

Prothorax very short (as in *C. collaris*, Bagn.), with the anterior margin strongly emarginate, median length approximately 0·3 the length of the head; all usual setæ present, the spine at each posterior angle being much the longest and stoutest, and the antero-marginal pairs the shortest. Wings broad, with margins subparallel and ends rounded; with 16 to 22 duplicated cilia. Fore-tarsal tooth small.

Abdomen not much broader than pterothorax, sides practically parallel to segment 6; 8 laterally angulate at basal third. Tube stout, less than twice as long as wide at base and more than two-thirds (about 0·7) as long as the head, distinctly constricted at apex. Bristles on 7 to 9 especially strong, long, and black, those on 9 about 0·8 the length of tube; those at apex of tube slender, as long as the tube. A pair of leaf-like ventro-median laminae on segment 11 (apex of tube).

*Type.* In Coll. Bagnall, University Museum, Oxford.

*Hab.* AUSTRALIA, Healesville, Victoria, 2 ♂s taken on branch of *Acacia linearis* with galls, 31. i. 16 (*R. Kelly*). Reg. no. 254.

I have pleasure in naming this species in honour of Dr. Eland Shaw, of Healesville, Victoria, who has secured me much interesting material, and has enriched entomology in other directions.

### Family Idolothripidæ.

#### Genus KLINOTHRIPS, nov.

Species of moderate size.

♂.—Head much as in *Kleothrips*, Schmutz, the produced part beyond the eyes representing 0·2 of the total length of the head. Anterior ocellus set near the base of the produced part, protected by a pair of setæ; eyes finely faceted, postocular setæ set in tubercles. Antennæ about 1·5 times the length of head. Prothoracic setæ set in tubercles. Wings

reaching to abdominal segment 4. Fore-coxæ prominent, fore-femora very sharply bent basally, causing a prominent angle at base within; the outer radius adorned by two prominent spine-set tubercles, one short and straight, the other larger, slightly curved, and surmounted by a curved spine; a strong curved spine springs from a prominence at anterior angle without, much as in *Dicaiothrips*. Abdomen elongated, tube short, about 1·2 times as long as segment 8 and only 0·6 the length of head.

Fig. 3.



*Klinothrips femoralis*, gen. et sp. n., ♂. Left fore-leg.

This species is separated from ♂ *Mecynothrips*, Bagn., by the less strongly produced head, the simple prothorax, and the structure of the fore-femora; and from *Kleothrips* (= *Dracothrips*, Bagn.) and *Dicaiothrips*, Bufm., by the last-named feature. It should be noted that, with the exception of *D. nitidus*, Bagn., the head in *Dicaiothrips* is only slightly produced, never as much as either the length of an eye or of the base of the produced part.

Type. *Klinothrips femoralis*, sp. n.

*Klinothrips femoralis*, sp. n.

♂.—Length 7·5 mm.

With the characters of the genus.

Colour dark chestnut-brown; antennal joint 3 yellow, tinged with brown distally.

Head widest across eyes, where it is about 0·35 as total length of head, more than twice as long as the pronotum. Relative lengths of antennal joints 3 to 8 approximately as follows:—72 : 56 : 48 : 29 : 23 : 18; 4 and 5 claviform.

Prothoracic setæ stout and spine-like.

*Type.* In British Museum of Natural History (Imperial Bureau of Entomology), 1 ♂ described from an unmounted spirit-specimen.

*Hab.* GOLD COAST, Aburi, from the foliage of *Cacao*, 1 ♂, Nov. 12th, 1915 (*W. H. Putterson*). Reg. no. 275, Imp. Bur. Ent. no. 103.

#### Genus KLEOTHRIPS, Schmutz.

*Kleothrips*, 1913 (July), K. Akad. Wiss. Wien. math.-naturw. Kl. cxxii. p. 1057.

*Dracothrips*, 1914 (Mar. 1), Ann. & Mag. Nat. Hist. ser. 8, xiii. p. 290.

#### Genus EIDOTHRIPS, nov.

Species of moderate size.

Head long, at least 2.5 times as long as broad, feebly and gently narrowed behind eyes and thence swollen towards base; eyes finely faceted; head only slightly produced beyond eyes for reception of antennæ, which are very slender and more than twice as long as the head. Prothorax small, simple in both sexes. Pterothorax largish, broader than the abdomen. Wings with median vein reaching beyond middle; fore-wings slightly broadened before apex, fringe close, not long, and of rather even length, with numerous duplicated cilia at the lower margin near apex. Femora, tibiæ, and tarsi of front legs unarmed in both sexes. Tube at least 1.5 times as long as the head.

♂.—Abdominal segment 5 with a posteriorly directed pair of lateral curved horn-like processes; 6 with a shorter straight pair situated near the posterior third of segment; 9 with posterior angles produced into spine-set tubercles. Tube, in ♂ only, with surface scabrous or coarsely aciculate, excepting the distal fourth.

Type. *Eidothrips alluaudi*, sp. n.

#### *Eidothrips alluaudi*, sp. n.

Length 5.4 to 6.0 mm.

With the characters of the genus.

Colour dark chestnut-brown, antennal segment 3 yellow with basal sixth brown, and 4 also yellow lightly shaded with brown basally, both tinged with brown at apices; veins of wings, scale, and upper margin at base brown, otherwise clear

but for a faint yellowish tinge near margins. Spines at posterior margin of abdominal segment 9 clear yellow. Relative lengths of antennal segments 3 to 8 approximately as follows :—45 : 29 : 23 : 18 : 8 : 7.

*Type.* In Coll. Allnau et Jeannel.

*Hab.* UGANDA, Kijabé, situated on the Uganda Railway in the forest of the Kikuyu escarpment, Dec. 1911 (*Allnau et Jeannel*).

#### Genus KRINOTHRIPS, nov.

Species of moderate size.

Agreeing with *Eidothrips*, gen. nov.; head more noticeably narrowed behind eyes and tube less than 1.5 times as long as the head, similar in both sexes.

♂.—Abdominal segment 5 simple, 6 with a posteriorly directed pair of lateral, curved, horn-like processes, 7 swollen and laterally tuberculate-dentate; 8 irregularly swollen and 9 simple. Tube practically smooth, as in ♀.

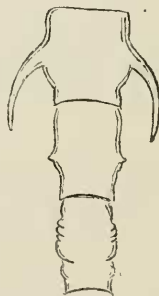
*Type.* *Krinothrips divergens*, sp. n.

#### *Krinothrips divergens*, sp. n.

Length about 7.0 mm.

With the characters of the genus.

Fig. 4.



*Krinothrips divergens*, gen. et sp. n., ♂. Dorsal view of abdominal segments 6-8, outline only.

Colour dark chestnut-brown; tarsi, extreme apex of fore-tibia, intermediate tibia distally, and hind tibia in distal half

yellow or yellowish. Antennal joint 3 light yellow, 4 and succeeding joints yellow lightly tinged with brown excepting apices of 4 and 5, 6 to 8 being practically yellowish-brown. Wings much as in *Eidothrips alluandi*, with the median veins narrowly yellowish-brown; cheeks with a few pairs of minute spiniferous tubercles; outer margins of femora with some longish blunt or knobbed colourless setæ. Tube sparingly but regularly setose in both sexes, less than 1.4 times as long as the head. Pronotum about 0.45 the length of the head. Relative lengths of antennal joints 3 to 8 as follows:—55 : 36 : 30 : 24 : 12 : 11 (or 10.5). Fore-femora and tibiæ in the ♂ more strongly and noticeably pilose than in the ♀.

*Type.* British Museum of Natural History (Imperial Bureau of Entomology).

*Hab.* GOLD COAST, Aburi (not on leaves of *Cacao*), Adawsi Rd., 27. 1. 14 (*W. H. Patterson*), Reg. 282; I.B.E. no. 116.

XXIII.—*Notes on the Braconidæ in the British Museum.*—  
 III. *On new Australian Agathinæ.* By ROWLAND E. TURNER, F.Z.S., F.E.S.

*Key to the Australian Species of Cremnops.*

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|--|---------------------------------|
| 1. Hind femora blackish; wings of the female yellow at the base and with a broad yellow band below the stigma, of the male fuscous with a narrow diaphanous band below the stigma. . . . . | <i>C. dissimilis</i> , Turn.    |
| Hind femora testaceous red; wings not differing in colour sexually. . . . .  | 2.                              |
| 2. Wings yellow basally from the nervulus and in the region of the stigma . . . . .  | 3.                              |
| Wings fuscous, only marked with yellow in the region of the stigma . . . . .   | <i>C. xanthostigma</i> , Szépl. |
| 3. The yellow colour of the wings extending unbroken from the base as far as the apex of the second cubital cell . . . . .   | <i>C. marginipennis</i> , Turn. |
| The yellow area interrupted by a broad fuscous band from the base of the stigma.   | <i>C. commutator</i> , Turn.    |